

SEQUENCE LISTING

<110> Genentech, Inc.
Gao, Wei-Qiang

<120> HAIR CELL DISORDERS

<130> GENENT.035VPC

<160> 14

<170> FastSEQ for Windows Version 4.0

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<211> 669
<212> PRT
<213> Homo sapiens

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35 40 45
Lys Glu Gly Arg Gly Lys Gly Lys Lys Lys Glu Arg Gly Ser
50 55 60
Gly Lys Lys Pro Glu Ser Ala Ala Gly Ser Gln Ser Pro Ala Leu Pro
65 70 75 80
Pro Arg Leu Lys Glu Met Lys Ser Gln Glu Ser Ala Ala Gly Ser Lys
85 90 95
Leu Val Leu Arg Cys Glu Thr Ser Ser Glu Tyr Ser Ser Leu Arg Phe
100 105 110
Lys Trp Phe Lys Asn Gly Asn Glu Leu Asn Arg Lys Asn Lys Pro Gln
115 120 125
Asn Ile Lys Ile Gln Lys Lys Pro Gly Lys Ser Glu Leu Arg Ile Asn
130 135 140
Lys Ala Ser Leu Ala Asp Ser Gly Glu Tyr Met Cys Lys Val Ile Ser
145 150 155 160
Lys Leu Gly Asn Asp Ser Ala Ser Ala Asn Ile Thr Ile Val Glu Ser
165 170 175
Asn Glu Ile Ile Thr Gly Met Pro Ala Ser Thr Glu Gly Ala Tyr Val
180 185 190
Ser Ser Glu Ser Pro Ile Arg Ile Ser Val Ser Thr Glu Gly Ala Asn
195 200 205
Thr Ser Ser Ser Thr Ser Thr Thr Gly Thr Ser His Leu Val
210 215 220
Lys Cys Ala Glu Lys Glu Lys Thr Phe Cys Val Asn Gly Gly Glu Cys
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Phe Met Val Lys Asp Leu Ser Asn Pro Ser Arg Tyr Leu Cys Lys Cys
245 250 255
Gln Pro Gly Phe Thr Gly Ala Arg Cys Thr Glu Asn Val Pro Met Lys
260 265 270

Val Gln Asn Gln Glu Lys Ala Glu Glu Leu Tyr Gln Lys Arg Val Leu
 275 280 285
 Thr Ile Thr Gly Ile Cys Ile Ala Leu Leu Val Val Gly Ile Met Cys
 290 295 300
 Val Val Ala Tyr Cys Lys Thr Lys Lys Gln Arg Lys Lys Leu His Asp
 305 310 315 320
 Arg Leu Arg Gln Ser Leu Arg Ser Glu Arg Asn Asn Met Met Asn Ile
 325 330 335
 Ala Asn Gly Pro His His Pro Asn Pro Pro Pro Glu Asn Val Gln Leu
 340 345 350
 Val Asn Gln Tyr Val Ser Lys Asn Val Ile Ser Ser Glu His Ile Val
 355 360 365
 Glu Arg Glu Ala Glu Thr Ser Phe Ser Thr Ser His Tyr Thr Ser Thr
 370 375 380
 Ala His His Ser Thr Thr Val Thr Gln Thr Pro Ser His Ser Trp Ser
 385 390 395 400
 Asn Gly His Thr Glu Ser Ile Leu Ser Glu Ser His Ser Val Ile Val
 405 410 415
 Met Ser Ser Val Glu Asn Ser Arg His Ser Ser Pro Thr Gly Gly Pro
 420 425 430
 Arg Gly Arg Leu Asn Gly Thr Gly Gly Pro Arg Glu Cys Asn Ser Phe
 435 440 445
 Leu Arg His Ala Arg Glu Thr Pro Asp Ser Tyr Arg Asp Ser Pro His
 450 455 460
 Ser Glu Arg Tyr Val Ser Ala Met Thr Thr Pro Ala Arg Met Ser Pro
 465 470 475 480
 Val Asp Phe His Thr Pro Ser Ser Pro Lys Ser Pro Pro Ser Glu Met
 485 490 495
 Ser Pro Pro Val Ser Ser Met Thr Val Ser Met Pro Ser Met Ala Val
 500 505 510
 Ser Pro Phe Met Glu Glu Glu Arg Pro Leu Leu Leu Val Thr Pro Pro
 515 520 525
 Arg Leu Arg Glu Lys Lys Phe Asp His His Pro Gln Gln Phe Ser Ser
 530 535 540
 Phe His His Asn Pro Ala His Asp Ser Asn Ser Leu Pro Ala Ser Pro
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 Leu Arg Ile Val Glu Asp Glu Glu Tyr Glu Thr Thr Gln Glu Tyr Glu
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 Pro Ala Gln Glu Pro Val Lys Lys Leu Ala Asn Ser Arg Arg Ala Lys
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 Arg Thr Lys Pro Asn Gly His Ile Ala Asn Arg Leu Glu Val Asp Ser
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 Asn Thr Ser Ser Gln Ser Ser Asn Ser Glu Ser Glu Thr Glu Asp Glu
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 Arg Val Gly Glu Asp Thr Pro Phe Leu Gly Ile Gln Asn Pro Leu Ala
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 Ala Ser Leu Glu Ala Thr Pro Ala Phe Arg Leu Ala Asp Ser Arg Thr
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<213> Homo sapiens

<220>

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<222> (2) ... (2008)

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act ttt ccc aaa ccc gat ccg agc cct tgg acc aaa ctc gcc tgc gcc 97
Thr Phe Pro Lys Pro Asp Pro Ser Pro Trp Thr Lys Leu Ala Cys Ala
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gag agc cgt ccg cgt aga gcg ctc cgt ctc cg^g cga gat gtc cga gcg 145
Glu Ser Arg Pro Arg Arg Ala Leu Arg Leu Arg Arg Asp Val Arg Ala
35 40 45

caa aga agg cag agg caa agg gaa ggg caa gaa gaa gga gcg agg ctc 193
Gln Arg Arg Gln Arg Glu Gly Gln Glu Glu Gly Ala Arg Leu
50 55 60

cg^g caa gaa gcc gga gtc cgc ggc ggg cag cca gag ccc agc ctt gcc 241
Arg Gln Glu Ala Gly Val Arg Gly Gln Pro Glu Pro Ser Leu Ala
65 70 75 80

tcc ccg att gaa aga gat gaa aag cca gga atc ggc tgc agg ttc caa 289
Ser Pro Ile Glu Arg Asp Glu Lys Pro Gly Ile Gly Cys Arg Phe Gln
85 90 95

act agt cct tcg gtg tga aac cag ttc tga ata ctc ctc tct cag att 337
Thr Ser Pro Ser Val * Asn Gln Phe * Ile Leu Leu Ser Gln Ile
100 105 110

caa gtg gtt caa gaa tgg gaa tga att gaa tcg aaa aaa caa acc aca 385
Gln Val Val Gln Glu Trp Glu * Ile Glu Ser Lys Lys Gln Thr Thr
115 120 125

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Lys Tyr Gln Asp Thr Lys Ala Arg Glu Val Arg Thr Ser His *
130 135 140

caa agc atc act ggc tga ttc tgg aga gta tat gtg caa agt gat cag 481
Gln Ser Ile Thr Gly * Phe Trp Arg Val Tyr Val Gln Ser Asp Gln
145 150 155

caa att agg aaa tga cag tgc ctc tgc caa tat cac cat cgt gga atc 529
Gln Ile Arg Lys * Gln Cys Leu Cys Gln Tyr His His Arg Gly Ile
160 165 170

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Lys Arg Asp His His Trp Tyr Ala Ser Leu Asn * Arg Ser Ile Cys
175 180 185

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ctt cat ggt gaa aga cct ttc aaa ccc ctc gag ata ctt gtg caa gtg Leu His Gly Glu Arg Pro Phe Lys Pro Leu Glu Ile Leu Val Gln Val 235 240 245	769
cca acc tgg att cac tgg agc aag atg tac tga gaa tgt gcc cat gaa Pro Thr Trp Ile His Trp Ser Lys Met Tyr * Glu Cys Ala His Glu 250 255 260	817
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gac cat aac cgg cat ctg cat cgc cct cct tgt ggt cgg cat cat gtg Asp His Asn Arg His Leu His Arg Pro Pro Cys Gly Arg His His Val 280 285 290 295	913
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ccg tct tcg gca gag cct tcg gtc tga acg aaa caa tat gat gaa cat Pro Ser Ser Ala Glu Pro Ser Val * Thr Lys Gln Tyr Asp Glu His 315 320 325	1009
tgc caa tgg gcc tca cca tcc taa ccc acc ccc cga gaa tgt cca gct Cys Gln Trp Ala Ser Pro Ser * Pro Thr Pro Arg Glu Cys Pro Ala 330 335 340	1057
ggt gaa tca ata cgt atc taa aaa cgt cat ctc cag tga gca tat tgt Gly Glu Ser Ile Arg Ile * Lys Arg His Leu Gln * Ala Tyr Cys 345 350	1105
tga gag aga agc aga gac atc ctt ttc cac cag tca cta tac ttc cac * Glu Arg Ser Arg Asp Ile Leu Phe His Gln Ser Leu Tyr Phe His 355 360 365	1153
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gat gtc atc cgt aga aaa cag tag gca cag cag ccc aac tgg ggg ccc Asp Val Ile Arg Arg Lys Gln * Ala Gln Gln Pro Asn Trp Gly Pro 400 405 410	1297
aag agg acg tct taa tgg cac agg agg ccc tcg tga atg taa cag ctt Lys Arg Thr Ser * Trp His Arg Arg Pro Ser * Met * Gln Leu 415 420 425	1345
cct cag gca tgc cag aga aac ccc tga ttc cta ccg aga ctc tcc tca Pro Gln Ala Cys Gln Arg Asn Pro * Phe Leu Pro Arg Leu Ser Ser 430 435 440	1393
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tgt aga ttt cca cac gcc aag ctc ccc caa atc gcc ccc ttc gga aat Cys Arg Phe Pro His Ala Lys Leu Pro Gln Ile Ala Pro Phe Gly Asn 460 465 470	1489
gtc tcc acc cgt gtc cag cat gac ggt gtc cat gcc ttc cat ggc ggt Val Ser Thr Arg Val Gln His Asp Gly Val His Ala Phe His Gly Gly 475 480 485	1537
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aag gct gcg gga gaa gaa gtt tga cca tca ccc tca gca gtt cag ctc Lys Ala Ala Gly Glu Glu Val * Pro Ser Pro Ser Ala Val Gln Leu 505 510 515	1633
ctt cca cca caa ccc cgc gca tga cag taa cag cct ccc tgc tag ccc Leu Pro Pro Gln Pro Arg Ala * Gln * Gln Pro Pro Cys * Pro 520 525 530	1681
ctt gag gat agt gga gga tga gga gta tga aac gac cca aga gta cga Leu Glu Asp Ser Gly Gly * Gly Val * Asn Asp Pro Arg Val Arg 535 540 545	1729
gcc agc cca aga gcc tgt taa gaa act cgc caa tag ccg gcg ggc caa Ala Ser Pro Arg Ala Cys * Glu Thr Arg Gln * Pro Ala Gly Gln 550 555 560	1777
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590

595

600

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Ser Gln Ser * Gly Asn Thr Cys Leu Pro Pro Gly * Gln Gln Asp
          605           610           615

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<212> PRT
<213> *Homo sapiens*

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Gly Ser Gly Lys Lys Pro Glu Ser Ala Ala Gly Ser Gln Ser Pro Ala
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Leu Pro Pro Gln Leu Lys Glu Met Lys Ser Gln Glu Ser Ala Ala Gly
      65          70          75          80
Ser Lys Leu Val Leu Arg Cys Glu Thr Ser Ser Glu Tyr Ser Ser Leu
      85          90          95
Arg Phe Lys Trp Phe Lys Asn Gly Asn Glu Leu Asn Arg Lys Asn Lys
      100         105         110
Pro Gln Asn Ile Lys Ile Gln Lys Lys Pro Gly Lys Ser Glu Leu Arg
      115         120         125
Ile Asn Lys Ala Ser Leu Ala Asp Ser Gly Glu Tyr Met Cys Lys Val
      130         135         140
Ile Ser Lys Leu Gly Asn Asp Ser Ala Ser Ala Asn Ile Thr Ile Val
      145         150         155         160
Glu Ser Asn Glu Ile Ile Thr Gly Met Pro Ala Ser Thr Glu Gly Ala
      165         170         175
Tyr Val Ser Ser Glu Ser Pro Ile Arg Ile Ser Val Ser Thr Glu Gly
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Ala Asn Thr Ser Ser Ser Thr Ser Thr Ser Thr Thr Gly Thr Ser His
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Leu Val Lys Cys Ala Glu Lys Glu Lys Thr Phe Cys Val Asn Gly Gly
      210         215         220
Glu Cys Phe Met Val Lys Asp Leu Ser Asn Pro Ser Arg Tyr Leu Cys
      225         230         235         240
Lys Cys Pro Asn Glu Phe Thr Gly Asp Arg Cys Gln Asn Tyr Val Met
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Ala Ser Phe Tyr Lys His Leu Gly Ile Glu Phe Met Glu Ala Glu Glu
      260         265         270

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 275 280 285
 Leu Val Val Gly Ile Met Cys Val Val Ala Tyr Cys Lys Thr Lys Lys
 290 295 300
 Gln Arg Lys Lys Leu His Asp Arg Leu Arg Gln Ser Leu Arg Ser Glu
 305 310 315 320
 Arg Asn Asn Met Met Asn Ile Ala Asn Gly Pro His His Pro Asn Pro
 325 330 335
 Pro Pro Glu Asn Val Gln Leu Val Asn Gln Tyr Val Ser Lys Asn Val
 340 345 350
 Ile Ser Ser Glu His Ile Val Glu Arg Glu Ala Glu Thr Ser Phe Ser
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 Thr Ser His Tyr Thr Ser Thr Ala His His Ser Thr Thr Val Thr Gln
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 Thr Pro Ser His Ser Trp Ser Asn Gly His Thr Glu Ser Ile Leu Ser
 385 390 395 400
 Glu Ser His Ser Val Ile Val Met Ser Ser Val Glu Asn Ser Arg His
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 Ser Ser Pro Thr Gly Gly Pro Arg Gly Arg Leu Asn Gly Thr Gly Gly
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 Pro Arg Glu Cys Asn Ser Phe Leu Arg His Ala Arg Glu Thr Pro Asp
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 Ser Tyr Arg Asp Ser Pro His Ser Glu Arg Tyr Val Ser Ala Met Thr
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 Thr Pro Ala Arg Met Ser Pro Val Asp Phe His Thr Pro Ser Ser Pro
 465 470 475 480
 Lys Ser Pro Pro Ser Glu Met Ser Pro Pro Val Ser Ser Met Thr Val
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 Leu Leu Leu Val Thr Pro Pro Arg Leu Arg Glu Lys Lys Phe Asp His
 515 520 525
 His Pro Gln Gln Phe Ser Ser Phe His His Asn Pro Ala His Asp Ser
 530 535 540
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 545 550 555 560
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 565 570 575
 Ala Asn Ser Arg Arg Ala Lys Arg Thr Lys Pro Asn Gly His Ile Ala
 580 585 590
 Asn Arg Leu Glu Val Asp Ser Asn Thr Ser Ser Gln Ser Ser Asn Ser
 595 600 605
 Glu Ser Glu Thr Glu Asp Glu Arg Val Gly Glu Asp Thr Pro Phe Leu
 610 615 620
 Gly Ile Gln Asn Pro Leu Ala Ala Ser Leu Glu Ala Thr Pro Ala Phe
 625 630 635 640
 Arg Leu Ala Asp Ser Arg Thr Asn Pro Ala Gly Arg Phe Ser Thr Gln
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 Ile Ala Val
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<213> Homo sapiens

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<222> (3)...(2027)

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Pro Ala Pro Arg Ala Val Arg Val Glu Arg Ser Val Ser Gly Glu Met
20 25 30

tcc gag ccg aaa gaa ggc aga ggc aaa ggg aag ggc aag aag aag gag 143
Ser Glu Arg Lys Glu Gly Arg Gly Lys Gly Lys Lys Lys Lys Glu
35 40 45

cga ggc tcc ggc aag aag ccg gag tcc gcg ggc agc cag agc cca 191
Arg Gly Ser Gly Lys Lys Pro Glu Ser Ala Ala Gly Ser Gln Ser Pro
50 55 60

gcc ttg cct ccc caa ttg aaa gag atg aaa agc cag gaa tcg gct gca 239
Ala Leu Pro Pro Gln Leu Lys Glu Met Lys Ser Gln Glu Ser Ala Ala
65 70 75

ggt tcc aaa cta gtc ctt cgg tgt gaa acc agt tct gaa tac tcc tct 287
Gly Ser Lys Leu Val Leu Arg Cys Glu Thr Ser Ser Glu Tyr Ser Ser
80 85 90 95

ctc aga ttc aag tgg ttc aag aat ggg aat gaa ttg aat cga aaa aac 335
Leu Arg Phe Lys Trp Phe Lys Asn Gly Asn Glu Leu Asn Arg Lys Asn
100 105 110

aaa cca caa aat atc aag ata caa aaa aag cca ggg aag tca gaa ctt 383
Lys Pro Gln Asn Ile Lys Ile Gln Lys Lys Pro Gly Lys Ser Glu Leu
115 120 125

cgc att aac aaa gca tca ctg gct gat tct gga gag tat atg tgc aaa 431
Arg Ile Asn Lys Ala Ser Leu Ala Asp Ser Gly Glu Tyr Met Cys Lys
130 135 140

gtg atc agc aaa tta gga aat gac agt gtc tct gcc aat atc acc atc 479
Val Ile Ser Lys Leu Gly Asn Asp Ser Ala Ser Ala Asn Ile Thr Ile
145 150 155

gtg gaa tca aac gag atc atc act ggt atg cca gcc tca act gaa gga 527
Val Glu Ser Asn Glu Ile Ile Thr Gly Met Pro Ala Ser Thr Glu Gly
160 165 170 175

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Ala Tyr Val Ser Ser Glu Ser Pro Ile Arg Ile Ser Val Ser Thr Glu

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cat ctt gta aaa tgt gcg gag aag gag aaa act ttc tgt gtg aat gga His Leu Val Lys Cys Ala Glu Lys Glu Lys Thr Phe Cys Val Asn Gly 210	215	220	671
ggg gag tgc ttc atg gtg aaa gac ctt tca aac ccc tcg aga tac ttg Gly Glu Cys Phe Met Val Lys Asp Leu Ser Asn Pro Ser Arg Tyr Leu 225	230	235	719
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atg gcc agc ttc tac aag cat ctt ggg att gaa ttt atg gag gcg gag Met Ala Ser Phe Tyr Lys His Leu Gly Ile Glu Phe Met Glu Ala Glu 260	265	270	815
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gaa cga aac aat atg atg aac att gcc aat ggg cct cac cat cct aac Glu Arg Asn Asn Met Met Asn Ile Ala Asn Gly Pro His His Pro Asn 320	325	330	1007
cca ccc ccc gag aat gtc cag ctg gtg aat caa tac gta tct aaa aac Pro Pro Pro Glu Asn Val Gln Leu Val Asn Gln Tyr Val Ser Lys Asn 340	345	350	1055
gtc atc tcc agt gag cat att gtt gag aga gaa gca gag aca tcc ttt Val Ile Ser Ser Glu His Ile Val Glu Arg Glu Ala Glu Thr Ser Phe 355	360	365	1103
tcc acc agt cac tat act tcc aca gcc cat cac tcc act act gtc acc Ser Thr Ser His Tyr Thr Ser Thr Ala His His Ser Thr Thr Val Thr 370	375	380	1151
cag act cct agc cac agc tgg agc aac gga cac act gaa agc atc ctt Gln Thr Pro Ser His Ser Trp Ser Asn Gly His Thr Glu Ser Ile Leu 385	390	395	1199
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His Ser Ser Pro Thr Gly Gly Pro Arg Gly Arg Leu Asn Gly Thr Gly																
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ggc cct cgt gaa tgt aac agc ttc ctc agg cat gcc aga gaa acc cct															1343	
Gly Pro Arg Glu Cys Asn Ser Phe Leu Arg His Ala Arg Glu Thr Pro																
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gat tcc tac cga gac tct cct cat agt gaa agg tat gtg tca gcc atg															1391	
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Thr Thr Pro Ala Arg Met Ser Pro Val Asp Phe His Thr Pro Ser Ser																
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Pro Lys Ser Pro Pro Ser Glu Met Ser Pro Pro Val Ser Ser Met Thr																
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Val Ser Met Pro Ser Met Ala Val Ser Pro Phe Met Glu Glu Glu Arg																
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Pro Leu Leu Leu Val Thr Pro Pro Arg Leu Arg Glu Lys Lys Phe Asp																
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cat cac cct cag cag ttc agc tcc ttc cac cac aac ccc gcg cat gac															1631	
His His Pro Gln Gln Phe Ser Ser Phe His His Asn Pro Ala His Asp																
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Ser Asn Ser Leu Pro Ala Ser Pro Leu Arg Ile Val Glu Asp Glu Glu																
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Tyr Glu Thr Thr Gln Glu Tyr Glu Pro Ala Gln Glu Pro Val Lys Lys																
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Leu Ala Asn Ser Arg Arg Ala Lys Arg Thr Lys Pro Asn Gly His Ile																
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Ala Asn Arg Leu Glu Val Asp Ser Asn Thr Ser Ser Gln Ser Ser Asn																
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Ser Glu Ser Glu Thr Glu Asp Glu Arg Val Gly Glu Asp Thr Pro Phe																
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Phe Arg Leu Ala Asp Ser Arg Thr Asn Pro Ala Gly Arg Phe Ser Thr			
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cag gaa gaa atc cag gcc agg ctg tct agt gta att gct aac caa gac	2015		
Gln Glu Glu Ile Gln Ala Arg Leu Ser Ser Val Ile Ala Asn Gln Asp			
660	665	670	
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Pro Ile Ala Val			
675			

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Ala Gly Ser Lys Leu Val Leu Arg Cys Glu Thr Ser Ser Glu Tyr Ser			
50 55 60			
Ser Leu Arg Phe Lys Trp Phe Lys Asn Gly Asn Glu Leu Asn Arg Lys			
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Asn Lys Pro Gln Asn Ile Lys Ile Gln Lys Lys Pro Gly Lys Ser Glu			
85 90 95			
Leu Arg Ile Asn Lys Ala Ser Leu Ala Asp Ser Gly Glu Tyr Met Cys			
100 105 110			
Lys Val Ile Ser Lys Leu Gly Asn Asp Ser Ala Ser Ala Asn Ile Thr			
115 120 125			
Ile Val Glu Ser Asn Glu Ile Ile Thr Gly Met Pro Ala Ser Thr Glu			
130 135 140			
Gly Ala Tyr Val Ser Ser Glu Ser Pro Ile Arg Ile Ser Val Ser Thr			
145 150 155 160			
Glu Gly Ala Asn Thr Ser Ser Ser Thr Ser Thr Ser Thr Gly Thr			
165 170 175			
Ser His Leu Val Lys Cys Ala Glu Lys Glu Lys Thr Phe Cys Val Asn			
180 185 190			
Gly Gly Glu Cys Phe Met Val Lys Asp Leu Ser Asn Pro Ser Arg Tyr			
195 200 205			
Leu Cys Lys Cys Pro Asn Glu Phe Thr Gly Asp Arg Cys Gln Asn Tyr			
210 215 220			
Val Met Ala Ser Phe Tyr Lys Ala Glu Glu Leu Tyr Gln Lys Arg Val			

225	230	235	240
Leu Thr Ile Thr Gly Ile Cys Ile Ala	Leu Leu Val Val Gly Ile Met		
245	250	255	
Cys Val Val Ala Tyr Cys Lys Thr Lys Lys Gln Arg Lys Lys Leu His			
260	265	270	
Asp Arg Leu Arg Gln Ser Leu Arg Ser Glu Arg Asn Asn Met Met Asn			
275	280	285	
Ile Ala Asn Gly Pro His His Pro Asn Pro Pro Glu Asn Val Gln			
290	295	300	
Leu Val Asn Gln Tyr Val Ser Lys Asn Val Ile Ser Ser Glu His Ile			
305	310	315	320
Val Glu Arg Glu Ala Glu Thr Ser Phe Ser Thr Ser His Tyr Thr Ser			
325	330	335	
Thr Ala His His Ser Thr Thr Val Thr Gln Thr Pro Ser His Ser Trp			
340	345	350	
Ser Asn Gly His Thr Glu Ser Ile Leu Ser Glu Ser His Ser Val Ile			
355	360	365	
Val Met Ser Ser Val Glu Asn Ser Arg His Ser Ser Pro Thr Gly Gly			
370	375	380	
Pro Arg Gly Arg Leu Asn Gly Thr Gly Gly Pro Arg Glu Cys Asn Ser			
385	390	395	400
Phe Leu Arg His Ala Arg Glu Thr Pro Asp Ser Tyr Arg Asp Ser Pro			
405	410	415	
His Ser Glu Arg Tyr Val Ser Ala Met Thr Thr Pro Ala Arg Met Ser			
420	425	430	
Pro Val Asp Phe His Thr Pro Ser Ser Pro Lys Ser Pro Pro Ser Glu			
435	440	445	
Met Ser Pro Pro Val Ser Ser Met Thr Val Ser Lys Pro Ser Met Ala			
450	455	460	
Val Ser Pro Phe Met Glu Glu Glu Arg Pro Leu Leu Leu Val Thr Pro			
465	470	475	480
Pro Arg Leu Arg Glu Lys Lys Phe Asp His His Pro Gln Gln Phe Ser			
485	490	495	
Ser Phe His His Asn Pro Ala His Asp Ser Asn Ser Leu Pro Ala Ser			
500	505	510	
Pro Leu Arg Ile Val Glu Asp Glu Glu Tyr Glu Thr Thr Gln Glu Tyr			
515	520	525	
Glu Pro Ala Gln Glu Pro Val Lys Lys Leu Ala Asn Ser Arg Arg Ala			
530	535	540	
Lys Arg Thr Lys Pro Asn Gly His Ile Ala Asn Arg Leu Glu Val Asp			
545	550	555	560
Ser Asn Thr Ser Ser Gln Ser Ser Asn Ser Glu Ser Glu Thr Glu Asp			
565	570	575	
Glu Arg Val Gly Glu Asp Thr Pro Phe Leu Gly Ile Gln Asn Pro Leu			
580	585	590	
Ala Ala Ser Leu Glu Ala Thr Pro Ala Phe Arg Leu Ala Asp Ser Arg			
595	600	605	
Thr Asn Pro Ala Gly Arg Phe Ser Thr Gln Glu Glu Ile Gln Ala Arg			
610	615	620	
Leu Ser Ser Val Ile Ala Asn Gln Asp Pro Ile Ala Val			
625	630	635	

<210> 6
<211> 2460

<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (461) ... (2371)

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cgggctcgcg cggaggccag gagctgagcg gcggcggctg ccggacgatg ggagcgtgag 120
caggacggtg ataacctctc cccgatcggg ttgcgagggc gccggcaga ggccaggacg 180
cgagccgcca gcggcggac ccatcgacga cttccgggg cgacaggagc agccccgaga 240
gccagggcga gcgcccggtc caggtggccg gaccgcccgc cgctccgcg ccgcgtctcc 300
tgcaggcaac gggagacgac cccgcgcagc gcgagcgcct cagcgcggcc gctcgctctc 360
cccatcgagg gacaaactt tcccaaaccg gatccgagcc cttggaccaa actcgccctgc 420
gccgagagcc gtccgcgtag agcgctccgt ctccggcag atg tcc gag cgc aaa 475
Met Ser Glu Arg Lys
1 5
gaa ggc aga ggc aaa ggg aag ggc aag aag aag gag cga ggc tcc ggc 523
Glu Gly Arg Gly Lys Gly Lys Gly Lys Lys Glu Arg Gly Ser Gly
10 15 20
aag aag ccg qag tcc gcg qcg qgc agc cag agc cca gcc ttg cct ccc 571
Lys Lys Pro Glu Ser Ala Ala Gly Ser Gln Ser Pro Ala Leu Pro Pro
25 30 35
caa ttg aaa gag atg aaa agc cag gaa tcg gct gca ggt tcc aaa cta 619
Gln Leu Lys Glu Met Lys Ser Gln Glu Ser Ala Ala Gly Ser Lys Leu
40 45 50
gtc ctt cgg tgt gaa acc agt tct gaa tac tcc tct ctc aga ttc aag 667
Val Leu Arg Cys Glu Thr Ser Ser Glu Tyr Ser Ser Leu Arg Phe Lys
55 60 65
tgg ttc aag aat ggg aat gaa ttg aat cga aaa aac aaa cca caa aat 715
Trp Phe Lys Asn Gly Asn Glu Leu Asn Arg Lys Asn Lys Pro Gln Asn
70 75 80 85
atc aag ata caa aaa aag cca ggg aag tca gaa ctt cgc att aac aaa 763
Ile Lys Ile Gln Lys Pro Gly Lys Ser Glu Leu Arg Ile Asn Lys
90 95 100
gca tca ctg gct gat tct gga gag tat atg tgc aaa gtg atc agc aaa 811
Ala Ser Leu Ala Asp Ser Gly Glu Tyr Met Cys Lys Val Ile Ser Lys
105 110 115
tta gga aat gac agt gcc tct gcc aat atc acc atc gtg gaa tca aac 859
Leu Gly Asn Asp Ser Ala Ser Ala Asn Ile Thr Ile Val Glu Ser Asn
120 125 130
gag atc atc act ggt atg cca gcc tca act gaa gga gca tat gtg tct 907
Glu Ile Ile Thr Gly Met Pro Ala Ser Thr Glu Gly Ala Tyr Val Ser
135 140 145

tca gag tct ccc att aga ata tca gta tcc aca gaa gga gca aat act			955
Ser Glu Ser Pro Ile Arg Ile Ser Val Ser Thr Glu Gly Ala Asn Thr			
150	155	160	165
tct tca tct aca tcc acc act ggg aca agc cat ctt gta aaa			1003
Ser Ser Ser Thr Ser Thr Thr Gly Thr Ser His Leu Val Lys			
170	175	180	
tgt gcg gag aag gag aaa act ttc tgt gtg aat gga ggg gag tgc ttc			1051
Cys Ala Glu Lys Glu Lys Thr Phe Cys Val Asn Gly Gly Glu Cys Phe			
185	190	195	
atg gtg aaa gac ctt tca aac ccc tcg aga tac ttg tgc aag tgc cca			1099
Met Val Lys Asp Leu Ser Asn Pro Ser Arg Tyr Leu Cys Lys Cys Pro			
200	205	210	
aat gag ttt act ggt gat cgc tgc caa aac tac gta atg gcc agc ttc			1147
Asn Glu Phe Thr Gly Asp Arg Cys Gln Asn Tyr Val Met Ala Ser Phe			
215	220	225	
tac aag gcg gag gag ctg tac cag aag aga gtg ctg acc ata acc ggc			1195
Tyr Lys Ala Glu Glu Leu Tyr Gln Lys Arg Val Leu Thr Ile Thr Gly			
230	235	240	245
atc tgc atc gcc ctc ctt gtg gtc ggc atc atg tgt gtg gtg gcc tac			1243
Ile Cys Ile Ala Leu Leu Val Val Gly Ile Met Cys Val Val Ala Tyr			
250	255	260	
tgc aaa acc aag aaa cag cgg aaa aag ctg cat gac cgt ctt cgg cag			1291
Cys Lys Thr Lys Lys Gln Arg Lys Lys Leu His Asp Arg Leu Arg Gln			
265	270	275	
agc ctt cgg tct gaa cga aac aat atg atg aac att gcc aat ggg cct			1339
Ser Leu Arg Ser Glu Arg Asn Asn Met Met Asn Ile Ala Asn Gly Pro			
280	285	290	
cac cat cct aac cca ccc ccc gag aat gtc cag ctg gtg aat caa tac			1387
His His Pro Asn Pro Pro Glu Asn Val Gln Leu Val Asn Gln Tyr			
295	300	305	
gta tct aaa aac gtc atc tcc agt gag cat att gtt gag aga gaa gca			1435
Val Ser Lys Asn Val Ile Ser Ser Glu His Ile Val Glu Arg Glu Ala			
310	315	320	325
gag aca tcc ttt tcc acc agt cac tat act tcc aca gcc cat cac tcc			1483
Glu Thr Ser Phe Ser Thr Ser His Tyr Thr Ser Thr Ala His His Ser			
330	335	340	
act act gtc acc cag act cct agc cac agc tgg agc aac gga cac act			1531
Thr Thr Val Thr Gln Thr Pro Ser His Ser Trp Ser Asn Gly His Thr			
345	350	355	
gaa agc atc ctt tcc gaa agc cac tct gta atc gtg atg tca tcc gta			1579
Glu Ser Ile Leu Ser Glu Ser His Ser Val Ile Val Met Ser Ser Val			
360	365	370	

gaa aac agt agg cac agc agc cca act ggg ggc cca aga gga cgt ctt		1627
Glu Asn Ser Arg His Ser Ser Pro Thr Gly Gly Pro Arg Gly Arg Leu		
375	380	385
aat ggc aca gga ggc cct cgt gaa tgt aac agc ttc ctc agg cat gcc		1675
Asn Gly Thr Gly Gly Pro Arg Glu Cys Asn Ser Phe Leu Arg His Ala		
390	395	400
405		
aga gaa acc cct gat tcc tac cga gac tct cct cat agt gaa agg tat		1723
Arg Glu Thr Pro Asp Ser Tyr Arg Asp Ser Pro His Ser Glu Arg Tyr		
410	415	420
gtg tca gcc atg acc acc ccg gct cgt atg tca cct gta gat ttc cac		1771
Val Ser Ala Met Thr Thr Pro Ala Arg Met Ser Pro Val Asp Phe His		
425	430	435
acg cca agc tcc ccc aaa tcg ccc cct' tcg gaa atg tct cca ccc gtg		1819
Thr Pro Ser Ser Pro Lys Ser Pro Pro Ser Glu Met Ser Pro Pro Val		
440	445	450
tcc agc atg acg gtg tcc aag cct tcc atg gcg gtc agc ccc ttc atg		1867
Ser Ser Met Thr Val Ser Lys Pro Ser Met Ala Val Ser Pro Phe Met		
455	460	465
gaa gaa gag aga cct cta ctt ctc gtg aca cca cca agg ctg cgg gag		1915
Glu Glu Arg Pro Leu Leu Leu Val Thr Pro Pro Arg Leu Arg Glu		
470	475	480
485		
aag aag ttt gac cat cac cct cag cag ttc agc tcc ttc cac cac aac		1963
Lys Lys Phe Asp His His Pro Gln Gln Phe Ser Ser Phe His His Asn		
490	495	500
ccc gcg cat gac agt aac agc ctc cct gct agc ccc ttg agg ata gtg		2011
Pro Ala His Asp Ser Asn Ser Leu Pro Ala Ser Pro Leu Arg Ile Val		
505	510	515
gag gat gag gag tat gaa acg acc caa gag tac gag cca gcc caa gag		2059
Glu Asp Glu Glu Tyr Glu Thr Thr Gln Glu Tyr Glu Pro Ala Gln Glu		
520	525	530
cct gtt aag aaa ctc gcc aat agc cgg cgg gcc aaa aga acc aag ccc		2107
Pro Val Lys Lys Leu Ala Asn Ser Arg Arg Ala Lys Arg Thr Lys Pro		
535	540	545
aat ggc cac att gct aac aga ttg gaa gtg gac agc aac aca agc tcc		2155
Asn Gly His Ile Ala Asn Arg Leu Glu Val Asp Ser Asn Thr Ser Ser		
550	555	560
565		
cag agc agt aac tca gag agt gaa aca gaa gat gaa aga gta ggt gaa		2203
Gln Ser Ser Asn Ser Glu Ser Glu Thr Glu Asp Glu Arg Val Gly Glu		
570	575	580
gat acg cct ttc ctg ggc ata cag aac ccc ctg gca gcc agt ctt gag		2251
Asp Thr Pro Phe Leu Gly Ile Gln Asn Pro Leu Ala Ala Ser Leu Glu		

585

590

595

gca aca cct gcc ttc cgc ctg gct gac agc agg act aac cca gca ggc 2299
 Ala Thr Pro Ala Phe Arg Leu Ala Asp Ser Arg Thr Asn Pro Ala Gly
 600 605 610

cgc ttc tcg aca cag gaa gaa atc cag gcc agg ctg tct agt gta att 2347
 Arg Phe Ser Thr Gln Glu Glu Ile Gln Ala Arg Leu Ser Ser Val Ile
 615 620 625

gct aac caa gac cct att gct gta taaaacctaa ataaacacat agattcacct 2401
 Ala Asn Gln Asp Pro Ile Ala Val
 630 635

gtaaaactt attttatata ataaagtatt ccaccttaaa ttaaacaatt tattttatt 2460

<210> 7

<211> 241

<212> PRT

<213> Homo sapiens

<400> 7
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 1 5 10 15
 Glu Arg Gly Ser Gly Lys Lys Pro Glu Ser Ala Ala Gly Ser Gln Ser
 20 25 30
 Pro Ala Leu Pro Pro Gln Leu Lys Glu Met Lys Ser Gln Glu Ser Ala
 35 40 45
 Ala Gly Ser Lys Leu Val Leu Arg Cys Glu Thr Ser Ser Glu Tyr Ser
 50 55 60
 Ser Leu Arg Phe Lys Trp Phe Lys Asn Gly Asn Glu Leu Asn Arg Lys
 65 70 75 80
 Asn Lys Pro Gln Asn Ile Lys Ile Gln Lys Lys Pro Gly Lys Ser Glu
 85 90 95
 Leu Arg Ile Asn Lys Ala Ser Leu Ala Asp Ser Gly Glu Tyr Met Cys
 100 105 110
 Lys Val Ile Ser Lys Leu Gly Asn Asp Ser Ala Ser Ala Asn Ile Thr
 115 120 125
 Ile Val Glu Ser Asn Glu Ile Ile Thr Gly Met Pro Ala Ser Thr Glu
 130 135 140
 Gly Ala Tyr Val Ser Ser Glu Ser Pro Ile Arg Ile Ser Val Ser Thr
 145 150 155 160
 Glu Gly Ala Asn Thr Ser Ser Ser Thr Ser Thr Ser Thr Thr Gly Thr
 165 170 175
 Ser His Leu Val Lys Cys Ala Glu Lys Glu Lys Thr Phe Cys Val Asn
 180 185 190
 Gly Gly Glu Cys Phe Met Val Lys Asp Leu Ser Asn Pro Ser Arg Tyr
 195 200 205
 Leu Cys Lys Cys Pro Asn Glu Phe Thr Gly Asp Arg Cys Gln Asn Tyr
 210 215 220
 Val Met Ala Ser Phe Tyr Ser Thr Ser Thr Pro Phe Leu Ser Leu Pro
 225 230 235 240
 Glu

<210> 8
 <211> 1715
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (493) ... (1215)

<400> 8

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 ggcgaggagt tccccaaac ttgttggAAC tccgggctcg cgccgaggcc aggagctgag 120
 cggcggcggc tgccggacga tgggagctg agcaggacgg tgataacctc tcccccgtcg 180
 gtttgcgagg gcccggca gaggccagga cgccgagccgc cagcggcggg acccatcgac 240
 gacttcccgg ggcgacagga gcagccccga gagccaggc gagcggccgt tccaggtggc 300
 cggaccgccc gccgcgtccg cgccgcgtc cctgcaggca acgggagacg ccccccgcga 360
 ggcgcagcgc ctcagcgcgg ccgcgtcgct tcccccgtcg gggacaaact tttcccaaac 420
 ccgatccgag cccttggacc aaactcgct gcgcgcgagag ccgtccgcgt agagcgctcc 480
 gtctccggcg ag atg tcc gag cgc aaa gaa ggc aga ggc aaa ggg aag ggc 531
 Met Ser Glu Arg Lys Glu Gly Arg Gly Lys Gly Lys Gly
 1 5 10

aag aag aag gag cga ggc tcc ggc aag aag ccg gag tcc gcg ggc 579
 Lys Lys Lys Glu Arg Gly Ser Gly Lys Lys Pro Glu Ser Ala Ala Gly
 15 20 25

agc cag agc cca gcc ttg cct ccc caa ttg aaa gag atg aaa agc cag 627
 Ser Gln Ser Pro Ala Leu Pro Pro Gln Leu Lys Glu Met Lys Ser Gln
 30 35 40 45

gaa tcg gct gca ggt tcc aaa cta gtc ctt cggttgt gaa acc agt tct 675
 Glu Ser Ala Ala Gly Ser Lys Leu Val Leu Arg Cys Glu Thr Ser Ser
 50 55 60

gaa tac tcc tct ctc aga ttc aag tgg ttc aag aat ggg aat gaa ttg 723
 Glu Tyr Ser Ser Leu Arg Phe Lys Trp Phe Lys Asn Gly Asn Glu Leu
 65 70 75

aat cga aaa aac aaa cca caa aat atc aag ata caa aaa aag cca ggg 771
 Asn Arg Lys Asn Lys Pro Gln Asn Ile Lys Ile Gln Lys Lys Pro Gly
 80 85 90

aag tca gaa ctt cgc att aac aaa gca tca ctg gct gat tct gga gag 819
 Lys Ser Glu Leu Arg Ile Asn Lys Ala Ser Leu Ala Asp Ser Gly Glu
 95 100 105

tat atg tgc aaa gtg atc agc aaa tta gga aat gac agt gcc tct gcc 867
 Tyr Met Cys Lys Val Ile Ser Lys Leu Gly Asn Asp Ser Ala Ser Ala
 110 115 120 125

aat atc acc atc gtg gaa tca aac gag atc atc act ggt atg cca gcc 915
 Asn Ile Thr Ile Val Glu Ser Asn Glu Ile Ile Thr Gly Met Pro Ala
 130 135 140

tca act gaa gga gca tat gtg tct tca gag tct ccc att aga ata tca	963
Ser Thr Glu Gly Ala Tyr Val Ser Ser Glu Ser Pro Ile Arg Ile Ser	
145 150 155	
gta tcc aca gaa gga gca aat act tct tca tct aca tct aca tcc acc	1011
Val Ser Thr Glu Gly Ala Asn Thr Ser Ser Ser Thr Ser Thr Ser Thr	
160 165 170	
act ggg aca agc cat ctt gta aaa tgt gcg gag aag gag aaa act ttc	1059
Thr Gly Thr Ser His Leu Val Lys Cys Ala Glu Lys Glu Lys Thr Phe	
175 180 185	
tgt gtg aat gga ggg gag tgc ttc atg gtg aaa gac ctt tca aac ccc	1107
Cys Val Asn Gly Gly Glu Cys Phe Met Val Lys Asp Leu Ser Asn Pro	
190 195 200 205	
tcg aga tac ttg tgc aag tgc cca aat gag ttt act ggt gat cgc tgc	1155
Ser Arg Tyr Leu Cys Lys Cys Pro Asn Glu Phe Thr Gly Asp Arg Cys	
210 215 220	
caa aac tac gta atg gcc agc ttc tac agt acg tcc act ccc ttt ctg	1203
Gln Asn Tyr Val Met Ala Ser Phe Tyr Ser Thr Ser Thr Pro Phe Leu	
225 230 235	
tct ctg cct gaa taggagcatg ctcagttggc gctgctttct tggcgtgc	1255
Ser Leu Pro Glu	
240	
tctccctca gattccaccc agagcttagat gtgtcttacc agatctaata ttgactgcct	1315
ctgcctgtcg catgagaaca ttaacaaaag caattgtatt acttcctctg ttgcgcacta	1375
gttggctctg agatactaata aggtgtgtga ggctccggat gtttctggaa ttgatattga	1435
atgatgtgat acaaattgtat agtcaatatac aagcagtgaa atatgataat aaaggcattt	1495
caaagtctca ctttattga taaaataaaaa atcattctac tgaacagtcc atcttcttta	1555
tacaatgacc acatcctgaa aagggtgttgc taaagctgta accgatatgc acttggaaatg	1615
atggtaagtt aattttgatt cagaatgtgt tatttgcac aaataaacat aataaaagga	1675
gttcagatgt tttcttcat taacaaaaaaa aaaaaaaaaaa	1715
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<211> 420	
<212> PRT	
<213> Homo sapiens	
<400> 9	
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Glu Arg Gly Ser Gly Lys Lys Pro Glu Ser Ala Ala Gly Ser Gln Ser	
20 25 30	
Pro Ala Leu Pro Pro Gln Leu Lys Glu Met Lys Ser Gln Glu Ser Ala	
35 40 45	
Ala Gly Ser Lys Leu Val Leu Arg Cys Glu Thr Ser Ser Glu Tyr Ser	
50 55 60	
Ser Leu Arg Phe Lys Trp Phe Lys Asn Gly Asn Glu Leu Asn Arg Lys	
65 70 75 80	
Asn Lys Pro Gln Asn Ile Lys Ile Gln Lys Lys Pro Gly Lys Ser Glu	
85 90 95	

Leu Arg Ile Asn Lys Ala Ser Leu Ala Asp Ser Gly Glu Tyr Met Cys
 100 105 110
 Lys Val Ile Ser Lys Leu Gly Asn Asp Ser Ala Ser Ala Asn Ile Thr
 115 120 125
 Ile Val Glu Ser Asn Glu Ile Ile Thr Gly Met Pro Ala Ser Thr Glu
 130 135 140
 Gly Ala Tyr Val Ser Ser Glu Ser Pro Ile Arg Ile Ser Val Ser Thr
 145 150 155 160
 Glu Gly Ala Asn Thr Ser Ser Ser Thr Ser Thr Ser Thr Thr Gly Thr
 165 170 175
 Ser His Leu Val Lys Cys Ala Glu Lys Glu Lys Thr Phe Cys Val Asn
 180 185 190
 Gly Gly Glu Cys Phe Met Val Lys Asp Leu Ser Asn Pro Ser Arg Tyr
 195 200 205
 Leu Cys Lys Cys Pro Asn Glu Phe Thr Gly Asp Arg Cys Gln Asn Tyr
 210 215 220
 Val Met Ala Ser Phe Tyr Lys Ala Glu Glu Leu Tyr Gln Lys Arg Val
 225 230 235 240
 Leu Thr Ile Thr Gly Ile Cys Ile Ala Leu Leu Val Val Gly Ile Met
 245 250 255
 Cys Val Val Ala Tyr Cys Lys Thr Lys Lys Gln Arg Lys Lys Leu His
 260 265 270
 Asp Arg Leu Arg Gln Ser Leu Arg Ser Glu Arg Asn Asn Met Met Asn
 275 280 285
 Ile Ala Asn Gly Pro His His Pro Asn Pro Pro Glu Asn Val Gln
 290 295 300
 Leu Val Asn Gln Tyr Val Ser Lys Asn Val Ile Ser Ser Glu His Ile
 305 310 315 320
 Val Glu Arg Glu Ala Glu Thr Ser Phe Ser Thr Ser His Tyr Thr Ser
 325 330 335
 Thr Ala His His Ser Thr Thr Val Thr Gln Thr Pro Ser His Ser Trp
 340 345 350
 Ser Asn Gly His Thr Glu Ser Ile Leu Ser Glu Ser His Ser Val Ile
 355 360 365
 Val Met Ser Ser Val Glu Asn Ser Arg His Ser Ser Pro Thr Gly Gly
 370 375 380
 Pro Arg Gly Arg Leu Asn Gly Thr Gly Gly Pro Arg Glu Cys Asn Ser
 385 390 395 400
 Phe Leu Arg His Ala Arg Glu Thr Pro Asp Ser Tyr Arg Asp Ser Pro
 405 410 415
 His Ser Glu Arg
 420

<210> 10
 <211> 2431
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (496)...(1755)

<400> 10
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gagcggcggc	ggctgcccga	cgatgggagc	gtgagcagga	cggtgataac	ctctccccga	180								
tcgggttgcg	agggcggccgg	gcagaggcca	ggacgcgagc	cgccagcggc	gggaccatc	240								
gacgacttcc	cggggcgcaca	ggagcagccc	cgagagccag	ggcgagcgcc	cgttccaggt	300								
gcgcggaccg	cccggccgt	ccgcggcccg	ctccctgcag	gcaacgggag	acgccccgc	360								
gcagcgcgag	cgcctcagcg	cggccgctcg	ctctccccat	cgagggacaa	actttccca	420								
aacccgatcc	gagcccttgg	accaaactcg	cctgcgccga	gagccgtccg	cgtagagcgc	480								
tccgtctccg	gcgag	atg	tcc	gag	cgc	aaa	gaa	ggc	aga	ggc	aaa	ggg	aag	531
	Met	Ser	Glu	Arg	Lys	Glu	Gly	Arg	Gly	Lys	Gly	Lys		
	1			5				10						
ggc aag aag aag gag cga ggc tcc ggc aag aag ccg gag tcc gcg gcg														579
Gly Lys Lys Lys Glu Arg Gly Ser Gly Lys Lys Pro Glu Ser Ala Ala														
15		20						25						
ggc agc cag agc cca gcc ttg cct ccc caa ttg aaa gag atg aaa agc														627
Gly Ser Gln Ser Pro Ala Leu Pro Pro Gln Leu Lys Glu Met Lys Ser														
30		35						40						
cag gaa tcg gct gca ggt tcc aaa cta gtc ctt cgg tgg gaa acc agt														675
Gln Glu Ser Ala Ala Gly Ser Lys Leu Val Leu Arg Cys Glu Thr Ser														
45		50						55						60
tct gaa tac tcc tct ctc aga ttc aag tgg ttc aag aat ggg aat gaa														723
Ser Glu Tyr Ser Ser Leu Arg Phe Lys Trp Phe Lys Asn Gly Asn Glu														
65		70						75						
ttg aat cga aaa aac aaa cca caa aat atc aag ata caa aaa aag cca														771
Leu Asn Arg Lys Asn Lys Pro Gln Asn Ile Lys Ile Gln Lys Lys Pro														
80		85						90						
ggg aag tca gaa ctt cgc att aac aaa gca tca ctg gct gat tct gga														819
Gly Lys Ser Glu Leu Arg Ile Asn Lys Ala Ser Leu Ala Asp Ser Gly														
95		100						105						
gag tat atg tgc aaa gtg atc agc aaa tta gga aat gac agt gcc tct														867
Glu Tyr Met Cys Lys Val Ile Ser Lys Leu Gly Asn Asp Ser Ala Ser														
110		115						120						
gcc aat atc acc atc gtg gaa tca aac gag atc atc act ggt atg cca														915
Ala Asn Ile Thr Ile Val Glu Ser Asn Glu Ile Ile Thr Gly Met Pro														
125		130						135						140
gcc tca act gaa gga gca tat gtg tct tca gag tct ccc att aga ata														963
Ala Ser Thr Glu Gly Ala Tyr Val Ser Ser Glu Ser Pro Ile Arg Ile														
145		150						155						
tca gta tcc aca gaa gga gca aat act tct tca tct aca tct aca tcc														1011
Ser Val Ser Thr Glu Gly Ala Asn Thr Ser Ser Ser Thr Ser Thr Ser														
160		165						170						
acc act ggg aca agc cat ctt gta aaa tgt gcg gag aag gag aaa act														1059
Thr Thr Gly Thr Ser His Leu Val Lys Cys Ala Glu Lys Glu Lys Thr														
175		180						185						

ttc tgt gtg aat gga ggg gag tgc ttc atg gtg aaa gac ctt tca aac Phe Cys Val Asn Gly Gly Glu Cys Phe Met Val Lys Asp Leu Ser Asn 190 195 200	1107
ccc tcg aga tac ttg tgc aag tgt cca aat gag ttt act ggt gat cgc Pro Ser Arg Tyr Leu Cys Lys Cys Pro Asn Glu Phe Thr Gly Asp Arg 205 210 215 220	1155
tgc caa aac tac gta atg gcc agc ttc tac aag gcg gag gag ctg tac Cys Gln Asn Tyr Val Met Ala Ser Phe Tyr Lys Ala Glu Glu Leu Tyr 225 230 235	1203
cag aag aga gtg ctg acc ata acc ggc atc tgc atc gcc ctc ctt gtg Gln Lys Arg Val Leu Thr Ile Thr Gly Ile Cys Ile Ala Leu Leu Val 240 245 250	1251
gtc ggc atc atg tgt gtg gtg gcc tac tgc aaa acc aag aaa cag cgg Val Gly Ile Met Cys Val Val Ala Tyr Cys Lys Thr Lys Lys Gln Arg 255 260 265	1299
aaa aag ctg cat gac cgt ctt cgg cag agc ctt cgg tct gaa cga aac Lys Lys Leu His Asp Arg Leu Arg Gln Ser Leu Arg Ser Glu Arg Asn 270 275 280	1347
aat atg atg aac att gcc aat ggg cct cac cat cct aac cca ccc ccc Asn Met Met Asn Ile Ala Asn Gly Pro His His Pro Asn Pro Pro Pro 285 290 295 300	1395
gag aat gtc cag ctg gtg aat caa tac gta tct aaa aac gtc atc tcc Glu Asn Val Gln Leu Val Asn Gln Tyr Val Ser Lys Asn Val Ile Ser 305 310 315	1443
agt gag cat att gtt gag aga gaa gca gag aca tcc ttt tcc acc agt Ser Glu His Ile Val Glu Arg Glu Ala Glu Thr Ser Phe Ser Thr Ser 320 325 330	1491
cac tat act tcc aca gcc cat cac tcc act act gtc acc cag act cct His Tyr Thr Ser Thr Ala His His Ser Thr Thr Val Thr Gln Thr Pro 335 340 345	1539
agc cac agc tgg agc aac gga cac act gaa agc atc ctt tcc gaa agc Ser His Ser Trp Ser Asn Gly His Thr Glu Ser Ile Leu Ser Glu Ser 350 355 360	1587
cac tct gta atc gtg atg tca tcc gta gaa aac agt agg cac agc agc His Ser Val Ile Val Met Ser Ser Val Glu Asn Ser Arg His Ser Ser 365 370 375 380	1635
cca act ggg ggc cca aga gga cgt ctt aat ggc aca gga ggc cct cgt Pro Thr Gly Gly Pro Arg Gly Arg Leu Asn Gly Thr Gly Gly Pro Arg 385 390 395	1683
gaa tgt aac agc ttc ctc agg cat gcc aga gaa acc cct gat tcc tac Glu Cys Asn Ser Phe Leu Arg His Ala Arg Glu Thr Pro Asp Ser Tyr 400 405 410	1731

cga gac tct cct cat agt gaa agg taaaaccgaa ggcaaagcta ctgcagagga 1785
Arg Asp Ser Pro His Ser Glu Arg
415 420

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ctttgtttga cggaacttat ttcttctgag cttctctcggt cgtcccagt actgacaggc 1965
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35 40 45
Asp Gln Asp Ala Arg Leu Ala Tyr Gly Ser Arg Val Lys Asp Ile Val
50 55 60
Pro Gln Glu Ala Glu Glu Phe Cys Arg Thr Gly Ala Asn Phe Thr Leu
65 70 75 80
Arg Glu Leu Gly Leu Glu Glu Val Thr Pro Pro His Gly Thr Leu Tyr
85 90 95
Arg Thr Asp Ile Gly Leu Pro His Cys Gly Tyr Ser Met Gly Ala Gly
100 105 110
Ser Asp Ala Asp Met Glu Ala Asp Thr Val Leu Ser Pro Glu His Pro
115 120 125
Val Arg Leu Trp Gly Arg Ser Thr Arg Ser Gly Arg Ser Ser Cys Leu
130 135 140
Ser Ser Arg Ala Asn Ser Asn Leu Thr Leu Thr Asp Thr Glu His Glu
145 150 155 160
Asn Thr Glu Thr Asp His Pro Gly Gly Leu Gln Asn His Ala Arg Leu
165 170 175
Arg Thr Pro Pro Pro Leu Ser His Ala His Thr Pro Asn Gln His
180 185 190
His Ala Ala Ser Ile Asn Ser Leu Asn Arg Gly Asn Phe Thr Pro Arg
195 200 205
Ser Asn Pro Ser Pro Ala Pro Thr Asp His Ser Leu Ser Gly Glu Pro
210 215 220
Pro Ala Gly Gly Ala Gln Glu Pro Ala His Ala Gln Glu Asn Trp Leu
225 230 235 240
Leu Asn Ser Asn Ile Pro Leu Glu Thr Arg Asn Leu Gly Lys Gln Pro
245 250 255

Phe Leu Gly Thr Leu Gln Asp Asn Leu Ile Glu Met Asp Ile Leu Gly
 260 265 270
 Ala Ser Arg His Asp Gly Ala Tyr Ser Asp Gly His Phe Leu Phe Lys
 275 280 285
 Pro Gly Gly Thr Ser Pro Leu Phe Cys Thr Thr Ser Pro Gly Tyr Pro
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 Leu Thr Ser Ser Thr Val Tyr Ser Pro Pro Pro Arg Pro Leu Pro Arg
 305 310 315 320
 Ser Thr Phe Ala Arg Pro Ala Phe Asn Leu Lys Lys Pro Ser Lys Tyr
 325 330 335
 Cys Asn Trp Lys Cys Ala Ala Leu Ser Ala Ile Val Ile Ser Ala Thr
 340 345 350
 Leu Val Ile Leu Ala Tyr Phe Val Ala Met His Leu Phe Gly Leu
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 Asn Trp His Leu Gln Pro Met Glu Gly Gln Met Tyr Glu Ile Thr Glu
 370 375 380
 Asp Thr Ala Ser Ser Trp Pro Val Pro Thr Asp Val Ser Leu Tyr Pro
 385 390 395 400
 Ser Gly Gly Thr Gly Leu Glu Thr Pro Asp Arg Lys Gly Lys Gly Thr
 405 410 415
 Thr Glu Gly Lys Pro Ser Ser Phe Phe Pro Glu Asp Ser Phe Ile Asp
 420 425 430
 Ser Gly Glu Ile Asp Val Gly Arg Arg Ala Ser Gln Lys Ile Pro Pro
 435 440 445
 Gly Thr Phe Trp Arg Ser Gln Val Phe Ile Asp His Pro Val His Leu
 450 455 460
 Lys Phe Asn Val Ser Leu Gly Lys Ala Ala Leu Val Gly Ile Tyr Gly
 465 470 475 480
 Arg Lys Gly Leu Pro Pro Ser His Thr Gln Phe Asp Phe Val Glu Leu
 485 490 495
 Leu Asp Gly Arg Arg Leu Leu Thr Gln Glu Ala Arg Ser Leu Glu Gly
 500 505 510
 Thr Pro Arg Gln Ser Arg Gly Thr Val Pro Pro Ser Ser His Glu Thr
 515 520 525
 Gly Phe Ile Gln Tyr Leu Asp Ser Gly Ile Trp His Leu Ala Phe Tyr
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 Asn Asp Gly Lys Glu Ser Glu Val Val Ser Phe Leu Thr Thr Ala Ile
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 Ala Leu Pro Pro Arg Leu Lys Glu Met Lys Ser Gln Glu Ser Ala Ala
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 Gly Ser Lys Leu Val Leu Arg Cys Glu Thr Ser Ser Glu Tyr Ser Ser
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 Leu Arg Phe Lys Trp Phe Lys Asn Gly Asn Glu Leu Asn Arg Lys Asn
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 Lys Pro Gln Asn Ile Lys Ile Gln Lys Pro Gly Lys Ser Glu Leu
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 Arg Ile Asn Lys Ala Ser Leu Ala Asp Ser Gly Glu Tyr Met Cys Lys
 625 630 635 640
 Val Ile Ser Lys Leu Gly Asn Asp Ser Ala Ser Ala Asn Ile Thr Ile
 645 650 655
 Val Glu Ser Asn Glu Ile Ile Thr Gly Met Pro Ala Ser Thr Glu Gly
 660 665 670
 Ala Tyr Val Ser Ser Glu Ser Pro Ile Arg Ile Ser Val Ser Thr Glu
 675 680 685
 Gly Ala Asn Thr Ser Ser Ser Thr Ser Thr Ser Thr Gly Thr Ser

690	695	700													
His	Leu	Val	Lys	Cys	Ala	Glu	Lys	Glu	Lys	Thr	Phe	Cys	Val	Asn	Gly
705					710					715					720
Gly	Glu	Cys	Phe	Met	Val	Lys	Asp	Leu	Ser	Asn	Pro	Ser	Arg	Tyr	Leu
						725			730					735	
Cys	Lys	Cys	Pro	Asn	Glu	Phe	Thr	Gly	Asp	Arg	Cys	Gln	Asn	Tyr	Val
						740			745					750	
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caggccccac	ggacattgct	gactcttcag	aacgtgctga	catggagcca	ggtagactga	180
aattatcatg	tgtccaaatt	aaaattgcat	acttcaagga	ttatttgaag	gactattctt	240
agaccctttt	aagaagattt	aaagaaaaac	cactcggccc	tgagtgcggc	gaggaccctg	300
tttgtggatg	tggaggagcg	cgggcccggag	gcc	atg	gac	354
			Met	Asp	Val	Lys
						5

1

5

cct	tac	cgc	tcg	ctg	acc	cg	cg	cg	gac	gcc	gag	cgc	cgc	tac	acc	402
Pro	Tyr	Arg	Ser	Leu	Thr	Arg	Arg	Arg	Asp	Ala	Glu	Arg	Arg	Tyr	Thr	
						10									20	

15

20

agc	tcg	tcc	g	g	g	g	g	g	g	g	g	g	g	g	g	450
Ser	Ser	Ser	Ala	Asp	Ser	Glu	Glu	Gly	Lys	Ala	Pro	Gln	Lys	Ser	Tyr	
															25	

30

35

agc	tcc	agc	gag	acc	ctg	aag	gcc	tac	gac	cag	gac	gcc	cgc	cta	gcc	498
Ser	Ser	Ser	Glu	Thr	Leu	Lys	Ala	Tyr	Asp	Gln	Asp	Ala	Arg	Leu	Ala	
															40	

45

50

55

tat	ggc	agc	cgc	gtc	aag	gac	att	gtg	ccg	cag	gag	gcc	gag	gaa	ttc	546
Tyr	Gly	Ser	Arg	Val	Lys	Asp	Ile	Val	Pro	Gln	Glu	Ala	Glu	Glu	Phe	
							60			65			70			

65

70

tgc	cgc	aca	ggt	gcc	aac	ttc	acc	ctg	cg	gag	ctg	ggg	ctg	gaa	gaa	594
Cys	Arg	Thr	Gly	Ala	Asn	Phe	Thr	Leu	Arg	Glu	Leu	Gly	Leu	Glu	Glu	
															75	

80

85

gta	acg	ccc	cct	cac	ggg	acc	ctg	tac	cg	aca	gac	att	ggc	ctc	ccc	642
Val	Thr	Pro	Pro	His	Gly	Thr	Leu	Tyr	Arg	Thr	Asp	Ile	Gly	Leu	Pro	
												90				

95

100

cac	tgc	ggc	tac	tcc	atg	ggg	gct	ggc	tct	gat	gcc	gac	atg	gag	gct	690
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His Cys Gly Tyr Ser Met Gly Ala Gly Ser Asp Ala Asp Met Glu Ala			
105	110	115	
gac acg gtg ctg tcc cct gag cac ccc gtg cgt ctg tgg ggc cgg agc			738
Asp Thr Val Leu Ser Pro Glu His Pro Val Arg Leu Trp Gly Arg Ser			
120	125	130	135
aca cgg tca ggg cgc agc tcc tgc ctg tcc agc cgg gcc aat tcc aat			786
Thr Arg Ser Gly Arg Ser Ser Cys Leu Ser Ser Arg Ala Asn Ser Asn			
140	145	150	
ctc aca ctc acc gac acc gag cat gaa aac act gag act gat cat ccg			834
Leu Thr Leu Thr Asp Thr Glu His Glu Asn Thr Glu Thr Asp His Pro			
155	160	165	
ggc ggc ctg cag aac cac gcg cgg ctc cgg acg ccg ccg ccg ctc			882
Gly Gly Leu Gln Asn His Ala Arg Leu Arg Thr Pro Pro Pro Pro Leu			
170	175	180	
tcg cac gcc cac acc ccc aac cag cac cac gcg gcc tcc att aac tcc			930
Ser His Ala His Thr Pro Asn Gln His His Ala Ala Ser Ile Asn Ser			
185	190	195	
ctg aac cgg ggc aac ttc acg ccg agg agc aac ccc agc ccg gcc ccc			978
Leu Asn Arg Gly Asn Phe Thr Pro Arg Ser Asn Pro Ser Pro Ala Pro			
200	205	210	215
acg gac cac tcg ctc tcc gga gag ccc cct gcc ggc ggc gcc cag gag			1026
Thr Asp His Ser Leu Ser Gly Glu Pro Pro Ala Gly Gly Ala Gln Glu			
220	225	230	
cct gcc cac gcc cag gag aac tgg ctg ctc aac agc aac atc ccc ctg			1074
Pro Ala His Ala Gln Glu Asn Trp Leu Leu Asn Ser Asn Ile Pro Leu			
235	240	245	
gag acc aga aac cta ggc aag cag cca ttc cta ggg aca ttg cag gac			1122
Glu Thr Arg Asn Leu Gly Lys Gln Pro Phe Leu Gly Thr Leu Gln Asp			
250	255	260	
aac ctc att gag atg gac att ctc ggc gcc tcc cgc cat gat ggg gct			1170
Asn Leu Ile Glu Met Asp Ile Leu Gly Ala Ser Arg His Asp Gly Ala			
265	270	275	
tac agt gac ggg cac ttc ctc ttc aag cct gga ggc acc tcc ccg ctc			1218
Tyr Ser Asp Gly His Phe Leu Phe Lys Pro Gly Gly Thr Ser Pro Leu			
280	285	290	295
ttc tgc acc aca tca cca ggg tac cca ctg acg tcc agc aca gtg tac			1266
Phe Cys Thr Thr Ser Pro Gly Tyr Pro Leu Thr Ser Ser Thr Val Tyr			
300	305	310	
tct cct ccg ccc cga ccc ctg ccc cgc agc acc ttc gcc cgg ccg gcc			1314
Ser Pro Pro Pro Arg Pro Leu Pro Arg Ser Thr Phe Ala Arg Pro Ala			
315	320	325	

ttt aac ctc aag aag ccc tcc aag tac tgt aac tgg aag tgc gca gcc		1362
Phe Asn Leu Lys Lys Pro Ser Lys Tyr Cys Asn Trp Lys Cys Ala Ala		
330	335	340
ctg agc gcc atc gtc atc tca gcc act ctg gtc atc ctg ctg gca tac		1410
Leu Ser Ala Ile Val Ile Ser Ala Thr Leu Val Ile Leu Leu Ala Tyr		
345	350	355
ttt gtg gcc atg cac ctg ttt ggc cta aac tgg cac ctg cag ccg atg		1458
Phe Val Ala Met His Leu Phe Gly Leu Asn Trp His Leu Gln Pro Met		
360	365	370
375		
gag ggg cag atg tat gag atc acg gag gac aca gcc agc agt tgg cct		1506
Glu Gly Gln Met Tyr Glu Ile Thr Glu Asp Thr Ala Ser Ser Trp Pro		
380	385	390
gtg cca acc gac gtc tcc cta tac ccc tca ggg ggc act ggc tta gag		1554
Val Pro Thr Asp Val Ser Leu Tyr Pro Ser Gly Gly Thr Gly Leu Glu		
395	400	405
acc cct gac agg aaa ggc aaa gga acc aca gaa gga aag ccc agt agt		1602
Thr Pro Asp Arg Lys Gly Lys Gly Thr Thr Glu Gly Lys Pro Ser Ser		
410	415	420
ttc ttt cca gag gac agt ttc ata gat tct gga gaa att gat gtg gga		1650
Phe Phe Pro Glu Asp Ser Phe Ile Asp Ser Gly Glu Ile Asp Val Gly		
425	430	435
agg cga gct tcc cag aag att cct cct ggc act ttc tgg aga tct caa		1698
Arg Arg Ala Ser Gln Lys Ile Pro Pro Gly Thr Phe Trp Arg Ser Gln		
440	445	450
455		
gtg ttc ata gac cat cct gtg cat ctg aaa ttc aat gtg tct ctg gga		1746
Val Phe Ile Asp His Pro Val His Leu Lys Phe Asn Val Ser Leu Gly		
460	465	470
aag gca gcc ctg gtt ggc att tat ggc aga aaa ggc ctc cct cct tca		1794
Lys Ala Ala Leu Val Gly Ile Tyr Gly Arg Lys Gly Leu Pro Pro Ser		
475	480	485
cat aca cag ttt gac ttt gtg gag ctg ctg gat ggc agg agg ctc cta		1842
His Thr Gln Phe Asp Phe Val Glu Leu Leu Asp Gly Arg Arg Leu Leu		
490	495	500
acc cag gag gcg cgg agc cta gag ggg acc ccg cgc cag tct cgg gga		1890
Thr Gln Glu Ala Arg Ser Leu Glu Gly Thr Pro Arg Gln Ser Arg Gly		
505	510	515
act gtg ccc ccc tcc agc cat gag aca ggc ttc atc cag tat ttg gat		1938
Thr Val Pro Pro Ser Ser His Glu Thr Gly Phe Ile Gln Tyr Leu Asp		
520	525	530
535		
tca gga atc tgg cac ttg gct ttt tac aat gac gga aag gag tca gaa		1986
Ser Gly Ile Trp His Leu Ala Phe Tyr Asn Asp Gly Lys Glu Ser Glu		
540	545	550

gtg gtt tcc ttt ctc acc act gcc att gcc ttg cct ccc cga ttg aaa	2034		
Val Val Ser Phe Leu Thr Thr Ala Ile Ala Leu Pro Pro Arg Leu Lys			
555	560	565	
gag atg aaa agc cag gaa tcg gct gca ggt tcc aaa cta gtc ctt cgg	2082		
Glu Met Lys Ser Gln Glu Ser Ala Ala Gly Ser Lys Leu Val Leu Arg			
570	575	580	
tgt gaa acc agt tct gaa tac tcc tct ctc aga ttc aag tgg ttc aag	2130		
Cys Glu Thr Ser Ser Glu Tyr Ser Ser Leu Arg Phe Lys Trp Phe Lys			
585	590	595	
aat ggg aat gaa ttg aat cga aaa aac aaa cca caa aat atc aag ata	2178		
Asn Gly Asn Glu Leu Asn Arg Lys Asn Lys Pro Gln Asn Ile Lys Ile			
600	605	610	615
caa aaa aag cca ggg aag tca gaa ctt cgc att aac aaa gca tca ctg	2226		
Gln Lys Lys Pro Gly Lys Ser Glu Leu Arg Ile Asn Lys Ala Ser Leu			
620	625	630	
gct gat tct gga gag tat atg tgc aaa gtg atc agc aaa tta gga aat	2274		
Ala Asp Ser Gly Glu Tyr Met Cys Lys Val Ile Ser Lys Leu Gly Asn			
635	640	645	
gac agt gcc tct gcc aat atc acc atc gtg gaa tca aac gag atc atc	2322		
Asp Ser Ala Ser Ala Asn Ile Thr Ile Val Glu Ser Asn Glu Ile Ile			
650	655	660	
act ggt atg cca gcc tca act gaa gga gca tat gtg tct tca gag tct	2370		
Thr Gly Met Pro Ala Ser Thr Glu Gly Ala Tyr Val Ser Ser Glu Ser			
665	670	675	
ccc att aga ata tca gta tcc aca gaa gga gca aat act tct tca tct	2418		
Pro Ile Arg Ile Ser Val Ser Thr Glu Gly Ala Asn Thr Ser Ser Ser			
680	685	690	695
aca tct aca tcc acc act ggg aca agc cat ctt gta aaa tgt gcg gag	2466		
Thr Ser Thr Ser Thr Gly Thr Ser His Leu Val Lys Cys Ala Glu			
700	705	710	
aag gag aaa act ttc tgt gtg aat gga ggg gag tgc ttc atg gtg aaa	2514		
Lys Glu Lys Thr Phe Cys Val Asn Gly Gly Glu Cys Phe Met Val Lys			
715	720	725	
gac ctt tca aac ccc tcg aga tac ttg tgc aag tgc cca aat gag ttt	2562		
Asp Leu Ser Asn Pro Ser Arg Tyr Leu Cys Lys Cys Pro Asn Glu Phe			
730	735	740	
act ggt gat cgc tgc caa aac tac gta atg gcc agc ttc tac agt acg	2610		
Thr Gly Asp Arg Cys Gln Asn Tyr Val Met Ala Ser Phe Tyr Ser Thr			
745	750	755	
tcc act ccc ttt ctg tct ctg cct gaa taggagcatg ctcagttgg	2657		
Ser Thr Pro Phe Leu Ser Leu Pro Glu			

760

765

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Met Glu Ile Tyr Ser Pro Asp Met Ser
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gag gtc gcc gcc gag agg tcc tcc agc ccc tcc act cag ctg agt gca 581
 Glu Val Ala Ala Glu Arg Ser Ser Ser Pro Ser Thr Gln Leu Ser Ala
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gac cca tct ctt gat ggg ctt ccg gca gca gaa gac atg cca gag ccc 629
 Asp Pro Ser Leu Asp Gly Leu Pro Ala Ala Glu Asp Met Pro Glu Pro
 30 35 40

cag act gaa gat ggg aga acc cct gga ctc gtg ggc ctg gcc gtg ccc 677
 Gln Thr Glu Asp Gly Arg Thr Pro Gly Leu Val Gly Leu Ala Val Pro
 45 50 55

tgc tgt gcg tgc cta gaa gct gag cgc ctg aga ggt tgc ctc aac tca 725
 Cys Cys Ala Cys Leu Glu Ala Glu Arg Leu Arg Gly Cys Leu Asn Ser
 60 65 70

gag aaa atc tgc att gtc ccc atc ctg gct tgc ctg gtc agc ctc tgc 773
 Glu Lys Ile Cys Ile Val Pro Ile Leu Ala Cys Leu Val Ser Leu Cys
 75 80 85

ctc tgc atc gcc ggc ctc aag tgg gta ttt gtg gac aag atc ttt gaa 821
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90

95

100

105

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 110 115 120

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 125 130 135

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 140 145 150

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 Gln Val Thr Val Gln Gly Asp Lys Ala Val Val Ser Phe Glu Pro Ser
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 Ala Ala Pro Thr Pro Lys Asn Arg Ile Phe Ala Phe Ser Phe Leu Pro
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tcc act gcg cca tcc ttc cct tca ccc acc ccg aac cct gag gtg aga 1109
 Ser Thr Ala Pro Ser Phe Pro Ser Pro Thr Arg Asn Pro Glu Val Arg
 190 195 200

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 Thr Pro Lys Ser Ala Thr Gln Pro Gln Thr Thr Glu Thr Asn Leu Gln
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 220 225 230

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 235 240 245

gag tgc ttc atg gtg aaa gac ctt tca aac ccc tcg aga tac ttg tgc 1301
 Glu Cys Phe Met Val Lys Asp Leu Ser Asn Pro Ser Arg Tyr Leu Cys
 250 255 260 265

aag tgc cca aat gag ttt act ggt gat cgc tgc caa aac tac gta atg 1349
 Lys Cys Pro Asn Glu Phe Thr Gly Asp Arg Cys Gln Asn Tyr Val Met
 270 275 280

gcc agc ttc tac agt acg tcc act ccc ttt ctg tct ctg cct gaa 1394
 Ala Ser Phe Tyr Ser Thr Ser Pro Phe Leu Ser Leu Pro Glu
 285 290 295

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